

Claims

1. Method for determining the local position (PO1) of at least one mobile radio communication device (UE1) which is to be located, in at least one radio cell (CE1) of a radio communication system (FC), wherein at least one further mobile radio communication device (UE2), which is situated in the same radio cell or in a different radio cell (CE1) as the radio communication device (UE1) which is to be located, and the current local position (PO2) of which is known to said device itself or to the radio network (NET) of the radio communication system (FC), transmits position information (PI2) by means of one or more radio information signals (RIS12) via a direct radio connection (DII2) to the radio communication device (UE1) which is to be located, or via an indirect radio connection (ID12) with the aid of the radio network (NET) to the radio communication device (UE1) which is to be located.

2. Method according to claim 1, characterized in that the radio communication device (UE1) which is to be respectively located, emits in advance via its radio interface at least one inquiry signal (AS12) with which one or more further mobile radio communication devices (UE2), which are possibly situated in its vicinity, are requested to immediately send back one or more radio information signals (RIS12) containing position information (PI2) to this inquiring radio communication device (UE1).

3. Method according to claim 1, characterized in that in a first step the radio communication device (UE1) which is to be located, emits an inquiry signal (AS12) with which one or more further radio communication devices (UE2) in its vicinity are requested to firstly indicate to it their readiness to

participate in the position determination by sending back a specific acknowledgement signal (RAS12) in each case.

4. Method according to claim 3, characterized in that only in a subsequent second step following receipt of the respective acknowledgement signal (RAS12) from the radio communication device (UE1) which is to be located is a retrieval signal (IS12) for retrieving position information (PI2) in each case transmitted to the further radio communication device (UE2), from which the readiness thereof to participate in the position determination has been indicated in response to the inquiry signal (AS12) by a specific acknowledgement signal (RAS12).

5. Method according to any one of claims 2 to 4, characterized in that a broadcast radio signal is used as the inquiry signal (AS12).

6. Method according to any one of claims 2 to 5, characterized in that a response period (TI1) is predetermined for the respective further mobile radio communication device (UE2), within which period, following receipt of the respective inquiry signal (AS12), the device can indicate to the radio communication device (UE1) which is to be located (UE1) its readiness to participate in the position determination with the aid of a specific acknowledgement signal (RAS12).

7. Method according to any one of claims 2 to 6, characterized in that a minimum accuracy (AC1) for the local position (PO2) of the respective further mobile radio communication device (UE2) is predetermined as a condition of the fact that it is possible for it to send a specific

acknowledgement signal (RAS12) in response to the respective inquiry signal (AS12).

8. Method according to any one of the preceding claims 2 to 7, characterized in that the time difference (TES2) between the receiving time of the inquiry signal (IS12) and the sending time (TS2) of the radio information signal (RIS12) is transmitted in this radio information signal (RIS12) as a position parameter of the transmitted position information (PI2).

9. Method according to claim 8, characterized in that the respective further mobile radio communication device (UE2) transmits its current local position (PO2) and/or the sending time (TS2) of its radio information signal (RIS12) to the radio communication device (UE1) which is to be located, as the position parameter of the transmitted position information.

10. Method according to any one of the preceding claims, characterized in that the position information (PI2), which is transmitted by the at least one further mobile radio communication device (UE2) with the aid of the respective radio information signal (RIS12) to the radio communication device (UE1) which is to be located, is used as additional information to a RTT, OTDOA and/or GPS position measurement of the radio communication device (UE1) which is to be located.

11. Method according to any one of the preceding claims, characterized in that the transmitted position information (PI2) is used in the radio communication device (UE1) which is to be located for calculating its local position (PO2).

12. Method according to any one of claims 1 to 10, characterized in that the transmitted position information (PI2) is transmitted by the radio communication device (UE1) which is to be located via its radio interface to a position determining unit in the radio network (NET) for calculating its local position (PO2).

13. Radio communication device (UE1) comprising at least one inquiry unit for requesting position information (PI2) from at least one further mobile radio communication device (UE2), which is situated in the same radio cell or in a different radio cell (CE1) of a radio communication system (FC), and the current local position (PO2) of which is known to said device itself or to the radio network (NET) of the radio communication system, and comprising a receiving unit for receiving and evaluating one or more radio information signals (RIS12), which are transmitted by the at least one further mobile radio communication device (UE2) with position information (PI2) via a direct radio connection (DI12) to the radio communication device (UE1) which is to be located or via an indirect radio connection (ID12) with the aid of the radio network (NET) to the radio communication device (UE1) which is to be located.

14. Radio communication system (FC) comprising at least one radio communication device (UE1) according to claim 13.